

IN THE CLAIMS

Please amend the claims as follows:

- 1 1. (Currently Amended). A magneto-optical device comprising:
2 a waveguide structure that includes at least two cladding regions and core region,
3 wherein said cladding regions and core region comprise semiconductor alloy materials,
4 either said at least two cladding regions or said core region is doped with ferromagnetic
5 materials that are coupled to free carriers in said waveguide structure so as to increase the
6 ~~magneto-optical activity~~faraday rotation of said device.
- 1 2. (Previously Presented). The magneto-optical device of claim 1, wherein said
2 ferromagnetic materials comprises Fe, Ni, Co or fine particles of Fe.
- 1 3. (Original). The magneto-optical device of claim 1, wherein said at least one cladding
2 region comprises InP.
- 1 4. Canceled.
- 1 5. (Original). The magneto-optical device of claim 1, wherein said core region comprises
2 InGaAsP.
- 1 6. (Original). The magneto-optical device of claim 1, wherein said core region comprises
2 InGaAlAs.
- 1 7. (Currently Amended). A method of forming a magneto-optical device comprising:
2 forming a waveguide structure that includes at least two cladding regions and core
3 region, wherein said cladding regions and core region comprise semiconductor alloy
4 materials; and

5 doping either said at least two cladding regions or said core region with
6 ferromagnetic materials that are coupled to free carriers in said waveguide structure so as
7 to increase the faraday rotation of said device.

1 8. (Currently Amended). The method of claim 7, wherein said ferromagnetic materials
2 comprises Fe, Ni, Co or fine particles of Fe.

1 9. (Original). The method of claim 7, wherein said at least one cladding region comprises
2 InP.

1 10. Canceled.

1 11. (Original). The method of claim 7, wherein said core region comprises InGaAsP.

1 12. (Original). The method of claim 7, wherein said core region comprises InGaAlAs.